



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,239	11/26/2003	I-Ru Liu	BHT-3111-380	6111
7590 BRUCE H. TROXELL SUITE 1404 5205 LEESBURG PIKE FALLS CHURCH, VA 22041				
EXAMINER HAROON, ADEEL				
ART UNIT		PAPER NUMBER		
2618				
MAIL DATE		DELIVERY MODE		
05/29/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/721,239

Applicant(s)

LIU, I-RU

Examiner

ADEEL HAROON

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-13, 15-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-22 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-13, 15-17 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Amendment filed on date: 1/18/08.

Claims 1, 2, 4-13, 15-18 and 20-22 are pending.

Response to Arguments

2. Applicant's arguments filed 1/18/08 with respect to claim 1 have been fully considered but they are not persuasive.

Applicant first argues that cited prior art of Fujita differs from the applicant's claimed invention because the reception in Fujita is connected to a convolver while the applicant's receiver is coupled to a signal-sampling device. The examiner respectfully disagrees. The Fujita receiver being connected to a convolver does not preclude it being also coupled to a signal sampler. The two are not mutually exclusive. Fujita's receiver, while being connected to convolver 14, is also coupled to the signal sampling device, 22, as shown in figure 4.

Applicant secondly argues that Fujita's peak level detector includes other circuits so does not anticipate being coupled to the receiver. "Coupling" can be interpreted as being electrically connected and does not require a direct connection in order to be

anticipated by a reference. So Fujita's connection of the different circuits is interpreted as coupling of the circuits.

Therefore, Fujita discloses the disputed limitations for the reasons set forth above, and the rejection of claim 1 is maintained.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4-8, 11-13, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita (U.S. 5,974,083) in view of Propp et al. (U.S. 2005/0069064).

With respect to claim 1, Fujita discloses a system for RF gain control with a receiver for receiving a RF signal in figure 4. Fujita discloses a signal-sampling device, element number 22, for retrieving a signal strength information from the RF signal (Column 1, lines 23-24). Fujita also discloses a noise-sampling device, element number 23, for retrieving noise information from the RF signal (Column 1, lines 25-29). Fujita further discloses an operation unit, element numbers 24 and 25, for generating a feedback control signal according to the signal strength and noise information, wherein the operation unit provides the feedback control signal to element number 19 in the

receiver to adjust a gain value thereof (Column 1, lines 30-43). Fujita does not expressly disclose a detector for detecting a time interval between frames and a processor for controlling gain control system with frame information. However, Propp et al. teach sampling noise during an inter-frame gap for generating feedback control signals (Paragraph 13). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply Propp et al.'s noise sampling during an inter-frame gap in Fujita's system in order to better detect noise levels in the received signal (Propp et al.: Paragraph 3)

With respect to claim 2, Fujita discloses that the operation unit couples the signal strength and noise informations to generate the feedback control signal (Column 1, lines 30-43).

With respect to claim 4, Propp et al. disclose that the frame is a data frame (Paragraph 4).

With respect to claim 5, Propp et al. disclose that the noise is sampled during a short inter-frame space (Paragraph 13).

With respect to claim 6, Propp et al.'s sampling is a gate operation (Paragraph 13).

With respect to claims 7 and 8, Propp et al. teaches only sampling the noise during the inter-frame space; therefore, inhibiting/suspending the first processor the gain control operation during non-receiving mode (Paragraph 43).

With respect to claim 11, Fujita further discloses a second processor, element number 24, for generating a signal quality information according to the signal strength and noise informations (Column 1, lines 30-43).

With respect to claim 12, Fujita further discloses the signal quality information is signal-to-noise ratio (Column 1, lines 38-42).

With respect to claim 13, Fujita discloses a method for gain control with receiving a RF signal and retrieving a signal strength information from the RF signal (Column 1, lines 23-24). Fujita also discloses retrieving a noise information from the RF signal (Column 1, lines 25-29). Fujita further discloses adjusting a gain value according to the signal strength and noise informations (Column 1, lines 30-43). Fujita does not expressly disclose a detector for detecting a time interval between frames and a processor for controlling gain control system with frame information. However, Propp et al. teach sampling noise during an inter-frame gap for generating feedback control signals (Paragraph 13). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply Propp et al.'s noise sampling during an inter-frame gap in Fujita's system in order to better detect noise levels in the received signal (Propp et al.: Paragraph 3)

With respect to claim 15, Fujita further discloses generating a signal quality information according to the signal strength and noise informations (Column 1, lines 30-43).

With respect to claim 16, Fujita further discloses the signal quality information is signal-to-noise ratio (Column 1, lines 38-42).

With respect to claim 17, Fujita's feedback signals are interpreted as being selected from a group consisting of signal strength function, noise level function, sum of signal strength function and noise level function, and a larger of the signal strength function and the noise level functions (Column 1, lines 30-43).

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita and Propp et al. further in view of Kim et al. (U.S. 2003/0072397).

With respect to claims 9 and 10, the modified system of Fujita and Propp et al. is described above in the discussion of claim 1. Fujita does not disclose a transmitter being coupled to the receiver. However, Kim et al. discloses a transmitter being coupled to the gain control receiver (Paragraph 32). Kim et al. teach that when the receiver is in a state of not receiving data, when the transmitter is in a state of transmitting data, the first processor inhibits/suspends the gain control operation (Paragraph 43). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply the frame detecting and controlling technique of Kim et al. to the noise-sampling device of Fujita's system in order to only operate the sampling device when a frame is detected thus conserving power.

Allowable Subject Matter

6. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claims 20-22 are allowed.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADEEL HAROON whose telephone number is

Art Unit: 2618

(571)272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. H./
Examiner, Art Unit 2618

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618